

REMARKS

Claims 1-21 are currently pending in the patent application. The Examiner has rejected Claims 1 and 17 under 35 USC 112; has rejected Claims 1-4, 6, 10-14, and 17-19 under 35 USC 103 as unpatentable over the teachings of Killian; has rejected Claims 5, 7, 20, and 15 as unpatentable over Killian in view of Okanoya; has rejected Claims 8, 16, and 21 as unpatentable over Killian in view of Osterman; and, has rejected Claim 9 as unpatentable over Killian in view of Okanoya and Osterman. By this amendment, Applicants submit amendments to all of the independent claims, Claims 1, 10 and 17. For the reasons set forth below, Applicant respectfully asserts that the claims as amended are definite and patentable.

With regard to the rejections of Claims 1 and 17 under 35 USC 112, Applicant has amended the language of the claims to address any antecedent basis concerns. With specific reference to the claim language, Applicant believes that the use of the phrase "the physical network address" was appropriate, since it is inherent that an endpoint in a network has a physical network address. Nonetheless, Applicant has amended the language to provide antecedent basis. With regard to "the protocol request", and "the

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application" the language has been changed in both Claim 1 and Claim 17. Applicant believes that the amendments address the Examiner's concerns and respectfully requests withdrawal of the rejections under 35 USC 112.

Applicant notes that the Examiner has interpreted "the application" to mean "at least one endpoint". As is clear from a reading of the Specification and claims, the present patent application is directed to a distributed network wherein an application (i.e., a program) can be executing on any of a plurality of devices which are located at any one of a plurality of locations. "The application" is not the endpoint, but is a program of instructions which may be executing at an endpoint or may be executing at another location. "The application" does not have a physical location address, while "the endpoint" does have a physical location address in the network. Accordingly, Applicant requests that the Examiner reconsider the interpretation, set forth on page 3 of the Office Action, and the rejections which are predicated on that interpretation.

The present invention provides a system, program storage device, and method for performing steps for providing a protocol layer firewall for an endpoint in a distributed network comprising at least one server having at least an object request broker and a usage based firewall

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manager and a plurality of computing locations each having at least one endpoint. The method comprises the steps of receiving a protocol request from an application at the server, the protocol request requesting a protocol-specific Application Action Object (AAO) from the server; decoding the endpoint to determine a physical network address for the endpoint at which the application-requested firewall is needed; creating an AAO with the decoded information; registering the protocol request with the usage based firewall manager and obtaining a session number for the AAO; adding the session number to the AAO; and returning the AAO to the application to operate as a protocol-specific firewall at the endpoint. Applicant believes that the invention as claimed is patentably distinct from the cited art.

The Killian patent is directed to a client-server architecture wherein client requests are directed to one so-called "spreader server" which then sends the requests to the appropriate servers for responding. The Killian client requests are requests for web pages or images and include URLs (Col. 3, lines 29-30). In response to receiving a client request from the spreader server, a responding server will send the requested data as well as a set of performance monitoring instructions to the client (Col. 3, lines 35-39).

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Based on the instructions, the client will send performance messages back to the server. The performance messages detail the time it is taking for downloading the requested data, the time for loading additional necessary components related to the data, or the time at which a user aborts the download (Col. 3, lines 47-62). The server then analyzes the performance messages to detect which entity is the source of the performance degradation (Col. 3, line 63-Col. 4, line 19). The server may react to the detected problem based on that analysis. For example, if it is determined that the client is the site of the performance problem for downloading an image, the server may resend the image with fewer bytes.

Applicant respectfully asserts that the Killian patent does not teach or suggest the invention as claimed. With respect to the first claim feature, Applicant notes that the Killian patent handles client URL-based data or image requests. The Killian patent does not receive application protocol requests for protocol-specific Application Action Objects to act as firewalls. The data objects of Killian are not Application Action Objects which are created as protocol-specific firewalls in response to application requests for same. Rather, the Killian data objects are viewable web pages.

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With regard to the claim feature of "creating an AAO with said decoded (endpoint address) information", it is respectfully asserted that Killian simply creates an IP message with the requested data, the performance instructions, and the client's address. Killian has the client's address from the request. In contrast, under the present invention in a distributed network, the requesting application does not have a physical address. Rather, the application can be executing at one or a plurality of locations. Therefore, when an application request is received, the address of the endpoint for which the application is requesting the firewall must be determined. In contrast, as taught in Killian at Col. 8, lines 17-21, the client address is expressly found in the request.

Furthermore, with regard to the claim feature of registering the protocol with a usage based firewall manager and obtaining a session number, Applicant disagrees with the Examiner's interpretation of the cited Killian teachings. Killian details at Col. 9, lines 2-6, that a permanent cookie is set for a client, thereby enabling the server to track performance across multiple sessions. Such teachings clearly do not obviate the claim language; and, in fact, teach away from the claimed registering and obtaining a

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session number for interactive firewall management by the usage based firewall manager.

With regard to the claim feature of decoding the endpoint to determine the physical network address, Applicant respectfully notes that relaying a URL request with an express client's address to a backend server is not the same as or suggestive of decoding an endpoint in a distributed network based on an application protocol request received from an application that wishes to control what flows to the endpoint. Determining a client address from a client request, even if it required some decrypting, would not teach or suggest decoding an endpoint from an application request in a distributed network.

With regard to the rejection of Claim 2, as well as Claims 12 and 18, Applicant notes that the cited Killian teachings from Col. 3, lines 34-40 describe performance monitoring of the time spent on various aspects of handling the client request. There is nothing in the cited teachings which either teaches or suggests monitoring protocol usage at a location. Killian provides no discussion of protocol or of any protocol layer monitoring. Rather, Killian simply monitors the time at the application layer.

With regard to the rejection of Claim 3, as well as Claim 13, Applicant notes that the cited teachings from

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columns 8 and 9 of Killian describe that the client sends communications to the address of the spreader server and that permanent cookies are set for the client (see discussion above). There is nothing in the cited passages which teaches or suggests monitoring protocol usage, let alone the very specific steps of an application executing an action on the AAO, routing the AAO to a responsible gateway, and the gateway reporting to the firewall manager. Killian does not monitor protocol usage, does not have a firewall manager, does not have an application execute an action on an object, does not route the object to a gateway, and does not have a gateway route the object to a firewall manager. Killian simply sends its performance messages (not the requested data objects, let alone AAOs as claimed) to the spreader server and the spreader server relays them to the responding server.

With regard to Claim 4, and Claims 14 and 19, Applicant again disagrees with the Examiner. In the cited teachings from Columns 4 and 5, Killian determines whether a data object (e.g., an image) should be resent with fewer bytes in order for the requesting client to download it more readily or if different performance instructions should be sent. Killian is not teaching or suggesting that continued usage of a firewall be evaluated and/or allowed. The Examiner has

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stated that "it is obvious...that continued usage of the performance monitoring instructions...is determined." Applicant assert that the performance instructions do not constitute an AAO, or any suggestion thereof. Killian will modify the instructions and send new instructions to be executed by the client; but, such is not the same as determining if an AAO firewall object will continue to operate at a location.

Regarding Claim 6, as well as 7, Applicant avers that the cited teachings from Col. 13, line 66-Col. 14, line 10 simply describe a Killian client indicating whether a download has been completed. Such details do not teach or suggest ceasing usage of an AAO based on monitoring protocol usage and determining that continued usage of the AAO at the endpoint is not permissible.

With regard to Claims 5, 7, 9, 15, and 20, the Examiner has additionally cited the Okanoya patent. The Examiner concluded that the Killian patent failed to explicitly disclose retrieving a stored maximum of requests for the protocol and application and the additional steps. Applicant relies on the above arguments regarding the teachings of Killian, including that no protocol monitoring is done. Moreover, Applicant believes that the addition of the Okanoya teachings to Killian do not result in the

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invention as claimed. Okanoya teaches obtaining the number of current requests to a server and comparing that to a stored maximum number of server requests. Okanoya is directed to load balancing across servers and uses the comparison to determine if load should be shifted. Applicant respectfully asserts that the result of modifying Killian with Okanoya would be to provide load balancing at the spreader server, so that the load on each of the back end servers would be uniformly distributed. Applicant contends that one would not be motivated by the teachings to arrive at a system which tracks protocol requests and application requests at an endpoint and notifies an application if the numbers exceed stored maximums. If the numbers do exceed under the present invention, the AAO may be ceased at the endpoint and/or an alternative endpoint may be provided to the application. Clearly it would not be a logical extension of Killian and Okanoya to provide for load shifting off of a client based on performance monitoring, since shifting "load" (e.g., the downloading of a requested image which is resulting in decreased performance) from the requesting client site to a different client location would result in the requesting client not getting the data which was requested. Clearly such a modification of Killian, which renders Killian unworkable, would not be obvious.

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With regard to Claims 8, 9, 16 and 21, the Examiner has additionally cited the Osterman patent teachings. The Examiner cites Osterman's teachings of identifying an alternative endpoint to a server against "identifying an alternative endpoint to the client." Applicant first asserts that the claims do not recite identifying an alternative endpoint to a client. Rather, they recite identifying an alternative endpoint to an application. Applicant reiterates that having a server send requested data to a different client would render Killian unworkable. Furthermore, Applicant contends that the Examiner's statement at the top of page 8 (and repeated elsewhere) concluding that it would have been obvious "to modify the teachings of Killian, in order to identify alternative endpoints in accessing the client...(allowing) the transport of messages through different endpoints" is incorrect. Endpoints in a network are not conduits for messages since they are, by definition, not intermediate nodes. Clearly therefore it would not be obvious to route messages to clients via endpoints. Moreover, the claims do not recite identifying alternative endpoints for accessing a client. The claims recite identifying alternative endpoints to an application based on a determination that an endpoint with a protocol-specific AAO firewall has received more than a

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stored maximum of requests for the protocol and application. Clearly that claim language is not obviated by modifying Killian to have alternative paths to clients.

Based on the foregoing amendments and remarks, Applicants respectfully request entry of the amendments, reconsideration of the amended claim language in light of the remarks, withdrawal of the rejections, and allowance of the claims.

Respectfully submitted,

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